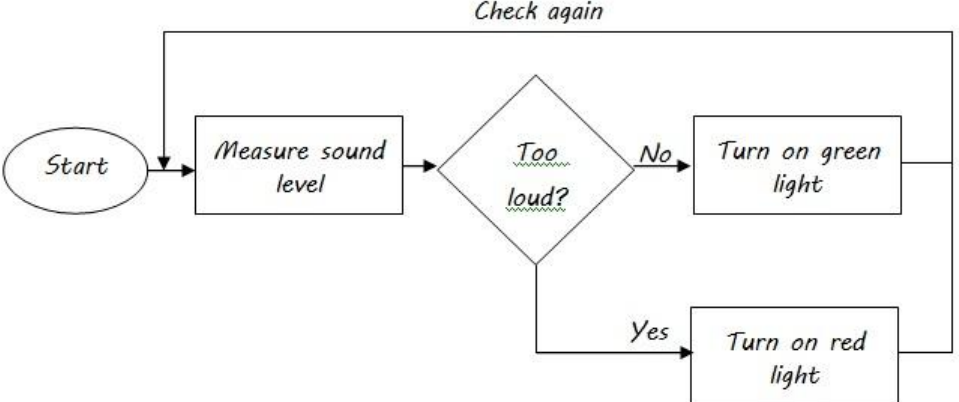
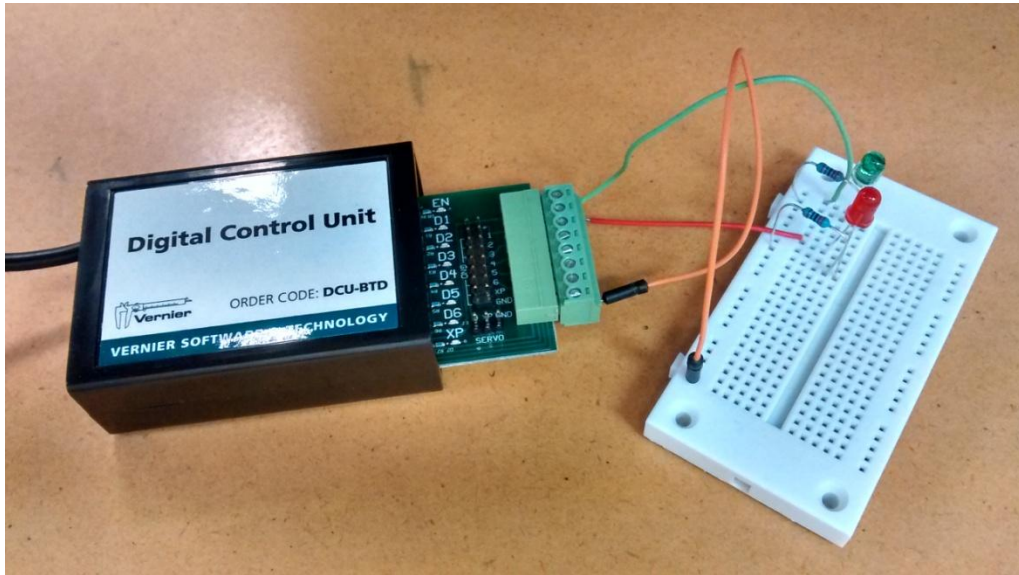


Engineering Design Sheet

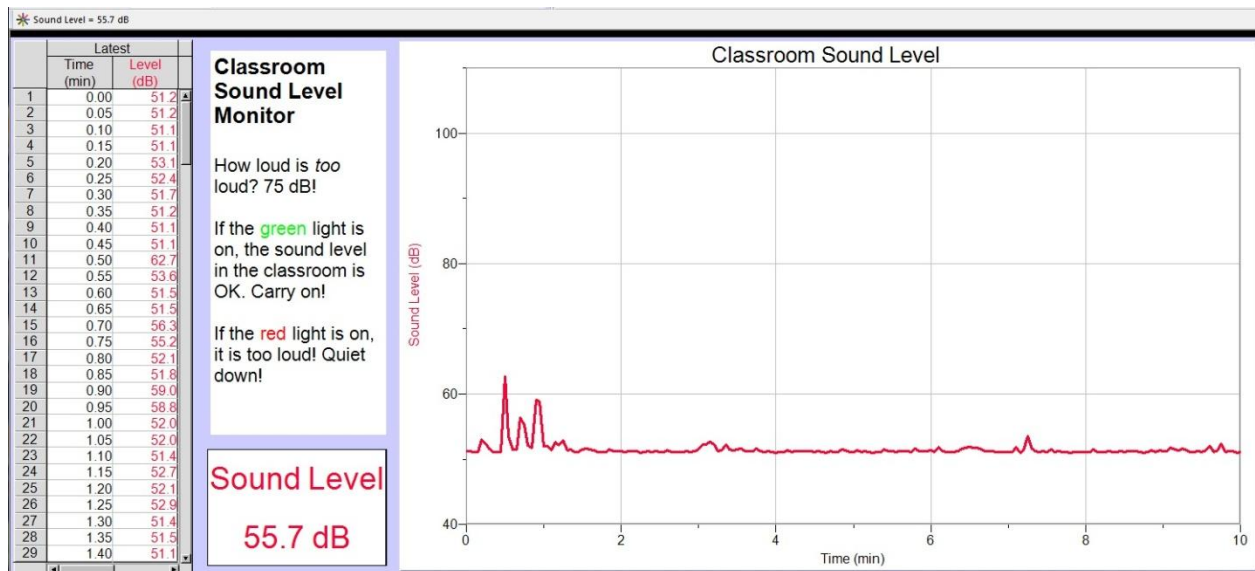
Project Code Name: <i>Project Silence</i>	Team Members: <i>Sam, Josh, Tom</i>
Design Objective	<i>We need to measure the sound level in a classroom, then alert the students if it is too high.</i>
Design Requirements and Constraints	<i>Our device should...</i> <ul style="list-style-type: none"> <i>Run continuously</i> <i>Must have large display of current sound level</i> <i>Indicator if sound level is too loud</i>
Process Map (Work Flow Diagram)	 <pre> graph LR Start([Start]) --> Measure[Measure sound level] Measure --> Decision{Too loud?} Decision -- No --> Green[Turn on green light] Decision -- Yes --> Red[Turn on red light] Green -- Check again --> Measure Red -- Check again --> Measure </pre>
Ideas and Sketches	<p><i>Live readout of current sound level in Logger Pro</i></p> <p><i>Indicators - like a traffic light:</i></p> <ul style="list-style-type: none"> <i>Good = green light (DCU line 1)</i> <i>Getting noisy = yellow light (DCU line 2)</i> <i>Too loud = red light(DCU line 3)</i> <p><i>Sound level in middle of classroom, traffic lights at front</i></p>
Test Log (Include what did not work and how you changed it)	<ul style="list-style-type: none"> <i>Teachers seemed to agree that more than 75 dB was too loud for independent work</i> <i>Simplified setup to just two lights (green and red on lines 1 and 2), although we would love to have it run a real traffic light</i>

Final Design (Include screenshot of Logger Pro Digital Out dialog box and pictures, as necessary)	<i>See pictures below</i>
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Hardware Set Up:

- *DCU Line 1 - Green LED (connected in series to 220 Ω resistor)*
- *DCU Line 2 - Red LED (connected in series to 220 Ω resistor)*



Digital Out

Test DCU

☐ Line 1 On ☐ Line 2 On ☐ Line 3 On

Configure Activation

☒ Activate Line 1

If Sound Level Is ≤ dB

Sound Level Is ≥ dB

☒ Activate Line 2

If Sound Level Is ≥ dB

Sound Level Is ≥ dB

☐ Activate Line 3

If Sound Level Is ≥ dB

Sound Level Is ≥ dB

☒ Start activation when dialog is closed

☐ Start activation when experiment run is started (Collect button clicked)

Logger Pro window and Digital Out dialog box